CONFIDENTIAL – INTERNAL DELIBERATIVE PROCESS
EPA's transmittal of these comments to the State is intended to convey our technical considerations only and should not be construed as setting forth any position regarding the exterior boundaries of the Wind River Reservations or the exercise of State authorities in this area.

Domestic Water Well Palatability Study:
List of Chemical Constituents to be Considered and Associated Rationale
April 11, 2013

At the meeting on March 28, 2013 in Cheyenne, Wyoming EPA agreed to provide a targeted list of chemicals to be considered as part of WY Study. Table 1, below provides this list, along with the recommended Risk Based Screening Levels, which are based on health effects data for these compounds.

Table 1: Additional Constituents and Recommended Risk Based Screening Levels

Chemical	MCL (ug/L)[a]	RSL (ug/L)[b]
Benzene	5	0.39
Bis (2-ethylhexyl)phthalate	6	4.8
2,4-Dimethylphenol		270
Ethylbenzene	700	1.3
2-Methylphenol		720
3-Methylphenol		720
2-Methylnaphthalene		27
Naphthalene		0.14
Toluene	1000	860
Xylenes	10000	190
DRO/GRO		200[c]

Notes:
a - MCL = Maximum Contaminant Level
b - RSL = Risk-based Screening Levels (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm)
c - Screening level for DRO/GRO from ATSDR Evaluation of Contaminants in Private Drinking Private Residential Well Water, Pavillion, Wyoming" 2010.

Rationale

We offer the foregoing list of additional constituents and the recommended risk based screening levels for consideration and to ensure the Domestic Water Well Palatability Study advances our understanding of palatability and health related concerns with the Pavillion

water. These additional suggested constituents:

- Will support the ability to draw conclusions regarding health risks associated with the domestic wells.
- Are recommended based on existing data. (Table 2 below illustrates the observed domestic well detections of constituents seen in other potential source samples associated with the Pavillion field.)

EPA has promulgated MCLs for less than 60 organic chemicals, which means they do not exist for many constituents of concern at Pavillion. Although MCLs are intended to be risk based, they are also derived based on the availability of low-cost analytical procedures that can be readily used by public water systems. Inclusion of the constituents with risk-based screening levels in Table 1 as part of the sampling and analysis plan supports our understanding of the State's goal of defining potential impacts to human health and palatability. EPA believes it is prudent to compare contaminant concentrations to MCLs as part of an evaluation of health risk AND augment this with an assessment of potential health risk associated with exposure to the various compounds present in the domestic wells for which there are not MCLs. Accordingly, EPA suggests that Wyoming include the constituents and detection levels identified in Table 1 above in addition to those outlined in the Palatability Study proposal.

Table 2: Constituents Associated with Phase II Sampling and Production Pits, Monitoring Wells and Fluids from 5 Production Wells

Organic Compounds from Phase II ESI only	**Pit Groundwater Monitoring Well**	**Gas production well (liquid or gas form)**	**Domestic water well**
SVOCs			
1,1 Biphenyl	Y	NA	
2,4-Dimethylphenol	Y	Y	
2 methylnaphthalene	Y	Y	Y
2 methylphenol	Y	Y	
3 and 4 methylphenol	Y	Y	Y
Bis(2-ethylhexyl)phthalate	Y	NA	Y
Naphthalene	Y	Y	Y
Phenol	Y	Y	Y
VOCs			
1,2,4 Trimethylbenzene	Y	Y	
1,3,5 Trimethylbenzene	Y	Y	
1,3 Dimethyladamantane	Y	Y	Y
Adamantane	Y	Y	Y
Benzene	Y	Y	
Carbon disulfide	Y	NA	
Cyclohexane	Y	NA	
Isopropylbenzene	Y	Y	
Ethylbenzene	Y	Y	
m,p-xylene	Y	Y	
methane	Y	Y	Y
methylcyclohexane	Y	NA	
VOCs			
n-propyl benzene	Y	Y	
Ethane	Y	Y	Y
Toluene	Y	Y	
Tertbutylbenzene	Y	Y	